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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/817,611 | 04/02/2004 | Sheng Sun | A7188/T47800 | 2449 |
| 57385 7590 01/30/2009 TOWNSEND AND TOWNSEND AND CREW LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834 | | | | |
| EXAMINER | | | | |
| BASHORE, ALAIN L | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1792 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/817,611

Applicant(s)

SUN ET AL.

Examiner

Alain L. Bashore

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 15-24, 28, 29 and 33-43 is/are pending in the application.
- 4a) Of the above claim(s) 33-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 15-24, 28, 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-8, 10-11, 15-22, 28-29, 33 are rejected under 35 U.S.C. 103(a) as being obvious over Otto et al in view of Lyer.

Otto et al discloses a method for processing a film over a substrate. A process gas is flowed for processing the film, and there is increased discretely the RF source power. The refractive index of a layer or layers can be varied by controlling pulse width, amplitude and/or duration and there is taught supplying Si and O containing compounds to make the film. The process conditions are changed during deposition (col 2, lines 37-58; col 3, lines 57-64).

Otto does not teach:

a process chamber and flowing in accordance with a predetermined algorithm;

monitoring an optical property during deposition or changing the process conditions in response to a measured optical property, more specifically, monitoring a refractive-index value of the film during deposition; and
the parameter is an ellipsometry measurement or stress uniformity of the film.

lyer discloses that it is known to monitor refractive index during deposition (col. 6) to control the refractive index further with the use of an ellipsometry measurement (col 6, lines lines 10-28) and that stress should be low (col 1, lines 60-65).

It would have been obvious to one with ordinary skill in the art to include real time refractive index monitoring in the process of Otto to provide better control over the film's refractive index. With regards to an algorithm and process chamber, Lyer discloses such (col 5, lines 5-28) such that it would be obvious to include such for the purpose of coating control.

Regarding claims 15-16, it would have been obvious to one with ordinary skill in the art to include these recitations because Lyer teaches void defect as related to refractive index so an end result would be understood as requiring constant or desired variation in the art (col 7, lines 15-20).

It would have been obvious to one with ordinary skill in the art to include reflectometry or ellipsometry measurements because Lyer teaches measurement of an optical property.

It would have been obvious to one with ordinary skill in the art to include stress uniformity because Lyer teaches undesirability of high stress.

3. Claims 4-5, 20, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otto et al in view of Lyer.as applied to claims above, and further in view of Chouinard.

Otto et al in view of Lyer do not disclose "vertical and horizontal profile optimizations" or annealing.

Chouinard et al discloses vertical and horizontal profile for waveguides (col 26, lines 55-60) and annealing (col 34, lines 56-61).

It would have been obvious to one with ordinary skill in the art to include the recitations of claims 4-5, 23-24 because Chouinard et al teaches disclose vertical and horizontal profile as important regarding waveguide operation.

It would have been obvious to one with ordinary skill in the art to include annealing because Chouinard teaches different material characteristics depending on annealing results.

Response to Arguments

4. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alain L. Bashore whose telephone number is 571-272-6739. The examiner can normally be reached on about 7:30 am to 5:00 pm (Mon. thru Thurs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alain L. Bashore/
Primary Examiner, Art Unit 1792